27th European Drosophila Research Conference

October 20 – 23, 2023

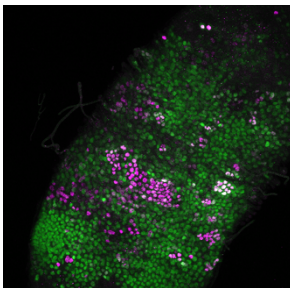
Lyon, France

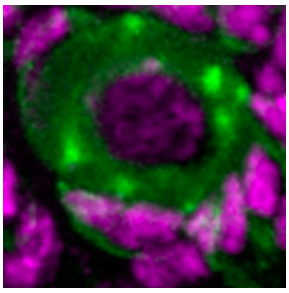
ABSTRACT BOOK (do not print)

edrclyon.scienceconf.org

@EDRC2023

Cancer models workshop





Drosophila **research has a long history of contributing to our understanding of the mechanisms of cancer initiation and propagation. These studies range from molecular mechanisms of DNA repair to polarity and neoplastic growth. The goal of the workshop will be to bring together scientists interested in these very diverse aspects of modelling cancer using *Drosophila* and to create cross-discipline dialogue spanning distinct cellular contexts from stem cells to epithelial cells.**

Organisers: Renata Basto & Allison Bardin (Institut Curie, Paris, France)

13h-13h15: Allison Bardin
"Nucleotide sharing through gap junctions buffers replication stress".
Department of Genetics and Developmental Biology, Institut Curie, Paris, France.

13:15-13h30: Manon Budzyk
"Gen nuclease is essential for the proliferation of non-programmed polyploid cells".
Basto lab, Cell Biology and Cancer department, CNRS and Institut Curie, Paris, France.

13h30-13h45: Brian Calvi
"Unscheduled endoreplication impairs the growth and function of cells and tissues".
Indiana University, Bloomington, USA.

13h45-14h: Wu-Min Den
"Sex dimorphic and systemic regulation of tumor growth by Upd2-JAK/STAT signaling**".**
Department of Biochemistry and Molecular Biology, Tulane University School of Medicine, New Orleans, USA.

14h-14h15: Kaustuv Ghosh
"Chromosomal Instability-induced Cell Invasion through Caspase-driven DNA Damage".
Milan lab, Institute for Research in Biomedicine (IRB Barcelona), The Barcelona Institute of Science and Technology, Barcelona, Spain.

14h15-14h30: Tatsushi Igaki
"Non-cell autonomous tumor progression by unfolded protein response"
Graduate School of Biostudies, Kyoto University, Kyoto, Japan.

14h30-14h45: Anne-Marie Martinez
"Transient loss of Polycomb components induces an epigenetic cancer fate".
Institute of Human Genetics, Montpellier, Montpellier, France

14:45-15h: Marta Mira-Osuna
"Contribution of septate junction components to apical and basal extrusion of protumoral cells"
Le Borgne lab, Institute of Gentics & Development of Rennes, Rennes, France.

15h-15h15: Mirka Uhlirova
"Immunosurveillance, understanding the crosstalk between immune cells and epithelial tumors".
Institute for Genetics Cologne Excellence Cluster on Cellular Stress Responses in Aging-Associated Diseases (CECAD), University of Cologne, Cologne, Germany.

P237

Neurogenetics of confinement-induced behavioral alterations

Fabiana Herédia * [1], Rebeca Zanini [1], André Macedo [2], Ednilson Mascarenhas Varela [1], Juliane Menezes [1], Julieta Ibarra [3], Andrés Garelli [1,3], Alisson Gontijo [1,4]

[1] iNOVA4Health, Nova Medical School, Faculdade de Ciências Médicas, NMS, FCM, Nova University of Lisbon, Lisbon – Portugal
[2] Department of Molecular Neurobiology, German Cancer Research Center (DFKZ Heidelberg – Germany
[3] Instituto de Investigaciones Bioquímicas de Bahía Blanca (INIBIBB), CONICET and Departamento de Biología, Bioquímica y Farmacia, Universidad Nacional del Sur, Bahía Blanca – Argentina
[4] Centre for Ecology, Evolution and Environmental Changes, cE3c, Faculty of Sciences, University of Lisbon, Lisbon – Portugal

The molecular and neural mechanisms underlying the translation of physical confinement to internal state changes and how these alter behavior are poorly understood and very difficult to study in natural settings due to an excessive number of possible confounding factors. Innate behaviors, which are complex, genetically-encoded behaviors that proceed with a predictable sequence, provide a unique window to study the effects of confinement on behavior. Adding this to the power of a genetically tractable model organism, we aim to help unravel both the molecular and cellular foundations of behaviorally-relevant, confinement-induced changes in internal states. Here, we start to genetically dissect the wing expansion behavior that Drosophila flies perform upon eclosing from their puparium. The execution of this behavior, which is triggered by the hormone Bursicon, is strongly negatively-regulated by spatial confinement. Namely, wing expansion behavior occurs within 30 min when animals eclose in normal, unconfined conditions, yet it is delayed to $>$ 180 min upon eclosion into a confined environment. The molecular mechanisms controlling this wing expansion decision process upon confinement are poorly understood. By chance, we found a background mutation segregating in *Drosophila* stocks where wing expansion behavior is severely compromised specifically under confinement, not under normal unconfined conditions. We are mapping this mutation in the hope that it provides a unique entrance into the molecular and neural underpinnings of confinement-induced behavioral control. In parallel, we have performed two studies to identify factors that are affected in the central nervous system of animals undergoing spatial confinement: a genome wide time-series transcriptomic study of confined and unconfined animals and a small-scale genetic screen for neuropeptides and receptors affecting this confinement-induced behavioral response. We will present the preliminary analyses of these studies. We hope that these approaches will help clarify how spatial confinement alters wing expansion behavior, and provide further insight on how environmental changes affect behavior and health.

*Speaker

Keywords: Innate behavior, genetic screen, wing expansion